

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Invertebrate Abstract**

**Element Code:** IMGASC9100

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Sonorella bequaerti* W.B. Miller, 1967

**COMMON NAME:** Happy Valley talussnail

**SYNONYMS:**

**FAMILY:** Helminthoglyptidae

**AUTHOR, PLACE OF PUBLICATION:** W.B. Miller, 1967.

**TYPE LOCALITY:** USA, Arizona, "Rincon Mts, canyon running NW from Rincon Peak and just W of Rincon Peak-Happy Valley Saddle Trail, at 6,000 to 6,100 ft, Pima Co." (Bequaert and Miller 1973).

**TYPE SPECIMEN:** AMNH 312762. W.N. Miller et al., 18-Apr-1965. Counts: 1 dry; Original number: 4769-A; Date cataloged: 13-May-1967 (The Academy of Natural Sciences Malacology collection, [http://data.acnatsci.org/biodiversity\\_databases/snails2.php/detls312762](http://data.acnatsci.org/biodiversity_databases/snails2.php/detls312762)).

**TAXONOMIC UNIQUENESS:** Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three common with Sonora), 3 in New Mexico, 1 in trans-Pecos Texas (in common with New Mexico), 8 in Sonora (3 in common with Arizona), and 3 in Chihuahua. *Sonorella bequaerti* is 1 of 26 species in the *S. hachitana* Complex.

**DESCRIPTION:** Snails in the genus *Sonorella* have a "depressed globose, helicoids shell, 12 to 30 mm in diameter, umbilicate or perforate, with a wide, unobstructed mouth and a thin, barely expanded peristome, smoothish or slightly sculptured with growth-lines, occasionally with fine oblique or spiral granulation and short hairs (mainly on the early whorls), lightly colored, and normally with a dark peripheral band. Its most characteristic features are, however, in the genitalia, which lack a dart sac and mucus glands." (Bequaert and Miller, 1973). For species in the *S. hachitana* Complex: the penis is a usually long, slender, narrowly pointed verge; and in extreme forms, the verge is thick and club-shaped. Shells are relatively large and capacious, with a smooth, silky-lustrous periostracum; usually with apical spirally descending threads. (Bequaert and Miller, 1973).

**AIDS TO IDENTIFICATION:** The most characteristic features of the genus *Sonorella* are, in the genitalia, which lack a dart sac and mucus glands (Bequaert and Miller 1972).

**ILLUSTRATIONS:**

**TOTAL RANGE:** Endemic to Arizona to the mountains of Rincon and Tanque Verde in Pima County Arizona.

**RANGE WITHIN ARIZONA:** See “Total Range.”

**SPECIES BIOLOGY AND POPULATION TRENDS**

**BIOLOGY:** Terrestrial gastropods do not move much usually only to find food or reproduce. Olfaction is the primary sensory behavior utilized to find and move toward a food item (on the scale of centimeters to meters). A moving terrestrial gastropod lays down water-laden mucus on which it moves, exposing its integument to a potentially drying atmosphere and increasing its water losses through the pallial cavity because of the necessity for gas exchange. A roosting terrestrial gastropod deploys a variety of passive mechanisms for water conservation, including the direct protection of its wet surfaces from drying conditions, avoidance of temperature extremes, the creation of more favorable microclimates and decreases in gas exchange. (A. Cook, *in* Barker 2001).

**REPRODUCTION:**

**FOOD HABITS:** Probably omnivorous, feeding on plant material (including algae, mosses, lichens, and possibly roots, shoots, leaves, flowers, anthers, pollen, fruit, seeds and rotting wood), and microorganisms associated with live and decaying vegetation; followed to a lesser extent by fungi and soil. (Speiser, *in* Barker, 2001).

**HABITAT:** The talussnail is a rock snail usually found in taluses or “slides” of coarse broken rock, generally found in crevices one to several feet below the surface, sealed to stones by their mucus. (SDCP). *Sonorella bequaerti* can be found in canyons from about 4,000 ft in the Tanque Verde Mts, and from 6,000 to 6,100 ft in the Rincon Mts.

**ELEVATION:** Around 4,000, and 6,000-6,100 feet ().

**PLANT COMMUNITY:**

**POPULATION TRENDS:** Unknown.

**SPECIES PROTECTION AND CONSERVATION**

|                                       |      |
|---------------------------------------|------|
| <b>ENDANGERED SPECIES ACT STATUS:</b> | None |
| <b>STATE STATUS:</b>                  | None |
| <b>OTHER STATUS:</b>                  | None |

**MANAGEMENT FACTORS:** Threats include destruction or disturbance of talus slopes.

**PROTECTIVE MEASURES TAKEN:**

**SUGGESTED PROJECTS:** Validity of the informal *Sonorella* “species-groups” (or “complexes”), has been brought into question by Naranjo-García (1988) and Roth (1996). Further research, including the use of molecular techniques, is needed to help clarify the relationships of these informal taxa. (Gilbertson and Radke 2005).

**LAND MANAGEMENT/OWNERSHIP:**

## **SOURCES OF FURTHER INFORMATION**

### **REFERENCES:**

- Bequaert, J.C., and W.B. Miller. 1973. The Mollusks of the Arid Southwest. The University of Arizona Press. Tucson, Arizona. Pp. 111, 114.
- [Http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html](http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html). Fact-sheet: Talussnail, *Sonorella*. Accessed: 11/23/2005.
- Integrated Taxonomic Information System (ITIS). Retrieved 6/28/2006 from ITIS, <http://www.itis.usda.gov>.
- NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.6. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: November 23, 2005).
- Santa Barbara Museum of Natural History. SBMNH: Invertebrate Zoology Online Database Collection. <http://www.sbcollections.org/iz/recordview.php>. Accessed: 3/28/2008.
- The Academy of Natural Sciences. ANSP Malacology Collection Search Details. Accessed: June 1, 2005. [http://data.acnatsci.org/biodiversity\\_databases/snails2.php/detls312762](http://data.acnatsci.org/biodiversity_databases/snails2.php/detls312762).

### **MAJOR KNOWLEDGEABLE INDIVIDUALS:**

### **ADDITIONAL INFORMATION:**

The genus *Sonorella* occurs over most of Arizona (except a strip north of the Grand Canyon, an extensive northeast corner, and the small southwest *Eremarionta* area), the southwest corner of New Mexico, trans-Pecos Texas, northeast Sonora, and the northwest corner of Chihuahua, Mexico. (Bequaert and Miller, 1973).

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